Amendm nts To Th Claims

The listing of claims replaces all prior versions and listings of claims in the application. The listing of claims present each claim with its respective status shown in parentheses. Only those claims being amended herein show their changes in highlighted form, i.e., insertions appear as underlined text (e.g., insertions) while deletions appear as strikethrough text (e.g., ~~deletions~~). All previously amended claims appear as clean text.

Claim 1. (Currently Amended) A system for non-invasively monitoring concentrations of blood constituents in a living subject, said system comprising:

a light source configured to irradiate a fleshy medium with radiation at a plurality of wavelengths, each wavelength selected for attenuation sensitivity to at least one of a plurality of blood constituent concentrations, said plurality of blood constituent concentrations including a glucose concentration;

an active pulse inducement device which causes a periodic change in a volume of blood in the fleshy medium with the level of inducement below a level that causes significant variations in the optical properties of the fleshy medium;

an optical detector positioned to detect light which has been attenuated by ~~propagated through~~ said fleshy medium, said optical detector configured to generate an output signal indicative of the intensity of said radiation after attenuation through said fleshy medium; and

a signal processor responsive to said output signal to analyze said output signal to extract portions of said signal due to optical characteristics of said blood to determine the concentration of at least one selected constituent within said subject's bloodstream.

Claims 2-11. (Canceled).

Claim 12. (Previously presented) The system of Claim 1, wherein the active pulse inducement device causes a periodic change in the volume of blood in the fleshy medium independent of the natural flow of blood in said fleshy medium.

Claim 13. (Previously presented) The system of Claim 1, wherein the active pulse inducement device causes a periodic change in the volume of blood in the fleshy medium in conjunction with the natural flow of blood in said fleshy medium.

Claim 14. (Previously presented) The system of Claim 1, further comprising a receptacle which receives said fleshy medium, said receptacle further having an inflatable bladder.

Claim 15. (Previously presented) The system of Claim 1, further comprising a receptacle which receives said fleshy medium, said receptacle further comprising a temperature variation element, said temperature variation element cyclicly varying the temperature of said fleshy medium in order to induce a change in the flow of blood in said fleshly medium.

Claim 16. (New) The system of Claim 1, wherein the change in fluid volume within the fleshy medium is induced at a location distal from a location of the irradiation.

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Claim 17. (New) A system for non-invasively monitoring concentrations of blood constituents in a living subject, said system comprising:

a light source configured to irradiate a fleshy medium at a test site on a living subject, wherein the irradiation includes radiation at a plurality of wavelengths selected for attenuation sensitivity to at least one of a plurality of blood constituent concentrations;

an active pulse inducement device configured to induce at a location other than the test site a change in a volume of fluid in the fleshy medium, thereby reducing variations in the fleshy medium at the test site while still showing at least some effect of the change in the volume at the test site;

an optical detector positioned to detect light which has been attenuated by said fleshy medium, and configured to generate an output signal; and

a signal processor responsive to said output signal to analyze said output signal to extract portions of said output signal due to optical characteristics of said blood to determine the concentration of at least one selected constituent within said living subject's bloodstream.

Claim 18. (New) The system of Claim 17, wherein the active pulse inducement device causes a periodic change in the volume of blood.

Claim 19. (New) The system of Claim 17, wherein the active pulse inducement device causes a periodic change in the volume of blood independent of a natural flow of blood.

Claim 20. (New) The system of Claim 17, wherein the active pulse inducement device causes a periodic change in the volume of blood in conjunction with a natural flow of blood.

Claim 21. (New) The system of Claim 17, further comprising a receptacle which receives said fleshy medium, said receptacle further having an inflatable bladder.

Claim 22. (New) The system of Claim 17, further comprising a receptacle which receives said fleshy medium, said receptacle further comprising a temperature variation element, said temperature variation element cyclicly varying the temperature of said fleshy medium in order to induce a change in the flow of blood in said fleshly medium.

Claim 23. (New) A system for non-invasively monitoring concentrations of blood constituents in a living subject, said system comprising:

a input which accepts a signal output from an optical detector positioned to detect light at a first area which has been attenuated by a fleshy medium of a living subject, said signal including effects of an non-natural active change in a volume of fluid in the fleshy medium, said non-natural active change being induced at a second area on the fleshy medium different from the first area; and

a signal processor responsive to said signal to extract portions of said signal due to optical characteristics of said fluid to determine the concentration of at least one selected constituent within said subject's bloodstream.

Claim 24. (New) A sensor and inducement system for outputting a signal indicative of concentrations of blood constituents in a living subject, said system comprising:

a light source configured to irradiate a fleshy medium at a test site on a living subject at a plurality of wavelengths selected for attenuation sensitivity to at least one of a plurality of blood constituent concentrations;

an active pulse inducement device configured to induce at a location other than the test site a change in a volume of fluid in the fleshy medium, thereby reducing variations in the fleshy medium at the test site while still showing at least some effect of the change in the volume at the test site; and

an optical detector positioned to detect light which has been attenuated by said fleshy medium and configured to generate an output signal